

# Asynchronous Spread-Spectrum Communications

## ABSTRACT OF THE DISCLOSURE

5        Communications from autonomous spread-spectrum transmitters are received by dynamically searching the communications band for messages having the same communications parameters, including the use of the same spreading code, but having potentially different code-phases. A receiver that is independent of the transmitters samples the communications band at each code-phase of the spreading code. When a message element is detected at a particular code-  
10      phase, the message element is appended to a queue associated with this code-phase. Message elements detected at other code-phases are appended to queues associated with the corresponding code-phases. Gaps between message elements at each code-phase define the beginning and end of each message. In a preferred embodiment of this invention, the processing of the samples occurs at a frequency above the baseband of the encoded message. An FFT processor provides a magnitude and phase associated with each detected message. The magnitude distinguishes message elements from noise elements, and changes in phase determine the bit value associated with each message elements.

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